

CLAIMS

We claim:

1. A video display system for displaying on a display medium an image, wherein the image comprises a first portion to be displayed at a first resolution and a second portion, mobile with respect to the first portion, to be displayed at a second resolution, comprising:

- A first video source mounted relative to the display medium;
- A second video source mounted relative to the first video source and the display medium;
- An image transformer generating an input to the second video source such that the second video source displays the second portion aligned with the first portion displayed by the first video source

2. The video display system of Claim 1, wherein the second video source comprises a video driver and a video steerer, mounted with the video driver to direct optical energy therefrom to the display medium.
3. The video display system of Claim 1, wherein the first video source comprises a projector, the second video source comprises a projector and an image steerer mounted with the projector to direct optical energy therefrom to the display medium.
4. The video display system of Claim 3, wherein the image steerer comprises a mirror capable of pan and tilt motion.
5. The video display system of Claim 4, wherein the pan and tilt motion of the mirror is controlled by a computer.
6. The video display system of Claim 4, wherein the first portion comprises the entire image and wherein the second portion is a subset of the entire image.
7. The video display system of Claim 1, wherein the image transformer comprises a homogeneous transform.

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A method of displaying on a display medium an image, wherein the image comprises a first portion to be displayed at a first resolution and a second portion, mobile with respect to the first portion, to be displayed at a second resolution, comprising:

- a) Displaying with a first video source the first portion on the display medium;
- b) Configuring a second video source so that its output corresponds to the portion of the display medium corresponding to the second portion;
- c) Generating an input to the second video source, compensated for the relative configurations of the first video source, the second video source, and the display medium.

9. The method of Claim 8, wherein the input to the second video source is compensated according to a transform determined by:

- a) Determining a first image plane transform by determining a correlation between an image plane corresponding to the first video source and the display medium;
- b) Determining a plurality of image plane correlations between the display on the display medium of the image plane corresponding to the first video source and an image plane corresponding to the second video source, each correlation corresponding to a configuration of the second video source;
- c) Determining a second image transform as a function of the configuration of the second video source from the first image plane transform and the image plane correlations.

10. The method of Claim 9, wherein:

- a) the plurality of image plane correlations has sufficient number that the number of unknown parameters in the second image transform is less than the number of equations resulting from the image plane correlations; and
- b) the second image transform is determined from a linear regression on the image plane correlations.

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11. ~~A method of determining an image transform for registration of first and second images to be displayed on a display medium, wherein the second image can be displayed at various locations relative to the first image by changing the configuration of a second video source, wherein the display of the first image has an associated first image plane and the display of the second image has an associated second image plane, comprising:~~

- a) ~~Determining a first image plane transform by determining a correlation between the first image plane and the display medium;~~
- b) ~~Determining a plurality of image plane correlations between the display on the display medium of the first image plane and the second image plane, each correlation corresponding to a configuration of the second video source;~~
- c) ~~Determining the image transform as a function of the configuration of the second video source from the first image plane transform and the image plane correlations.~~

12. The method of Claim 11, wherein:

- a) the plurality of image plane correlations has sufficient number that the number of unknown parameters in the image transform is less than the number of equations resulting from the image plane correlations; and
- b) the image transform is determined from a linear regression on the image plane correlations.